

APPENDIX REPORT

Project No.	SHT2009048102EW	Radio Specification	LORA
Test sample No.	YPHT20090481004	Model No.	ABX00029
Start test date	2020/11/24	Finish date	2020/11/24
Temperature	25°C	Humidity	50%
Test Engineer	Jiongsheng.Feng	Auditor	Xiaodong Zheo

Appendix clause	Test item	Result
A	Peak Output Power	PASS
B	Power Spectral Density	PASS
C	6 dB Bandwidth	PASS
D	99% Occupied Bandwidth	PASS
E	Duty cycle	PASS
F	Band edge and Spurious Emissions (conducted)	PASS

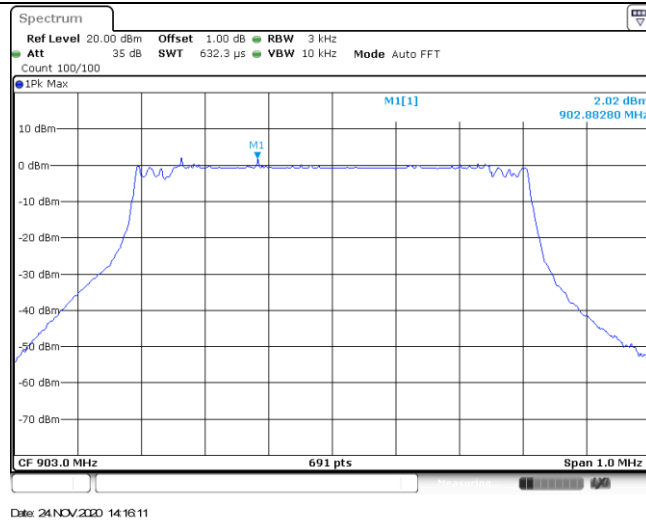
Appendix A: Peak Output Power

Modulation type	Channel	Output power (dBm)	Average Output power (dBm)	Limit (dBm)	Result
LORA	CH-L	4.35	4.29	≤ 30.00	Pass
	CH-M	4.22	3.14		
	CH-H	4.05	3.99		

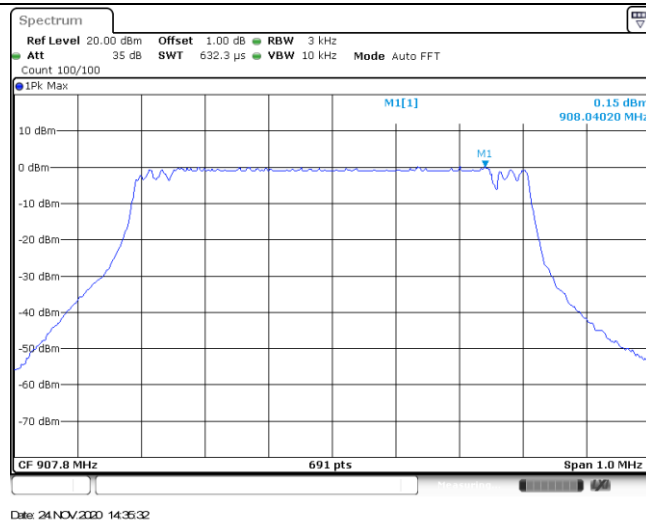
Appendix B: Power Spectral Density

Type	Channel	Power Spectral Density(dBm/3KHz)	Limit (dBm/3KHz)	Result
LORA	CH-L	2.02	≤8.00	Pass
	CH-M	0.15		
	CH-H	-0.14		

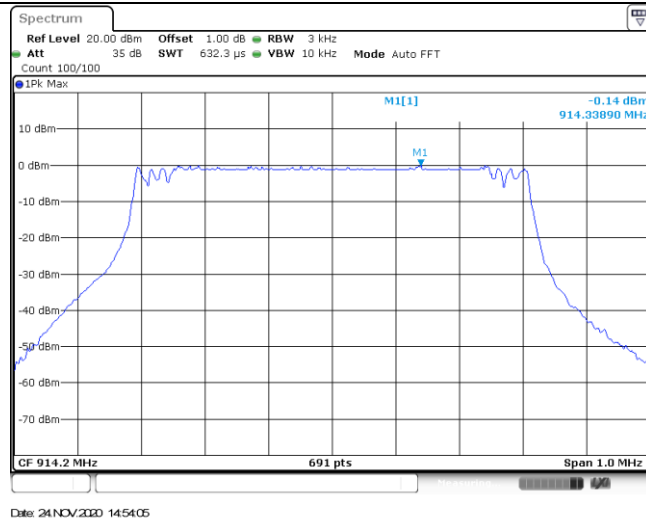
CH-L



CH-M



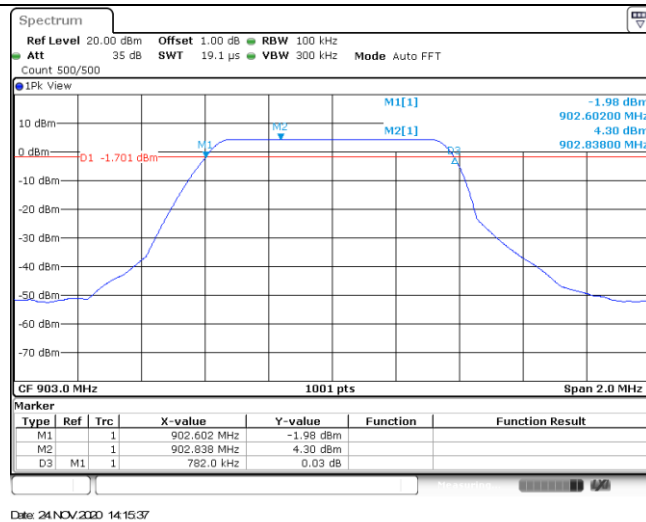
CH-H



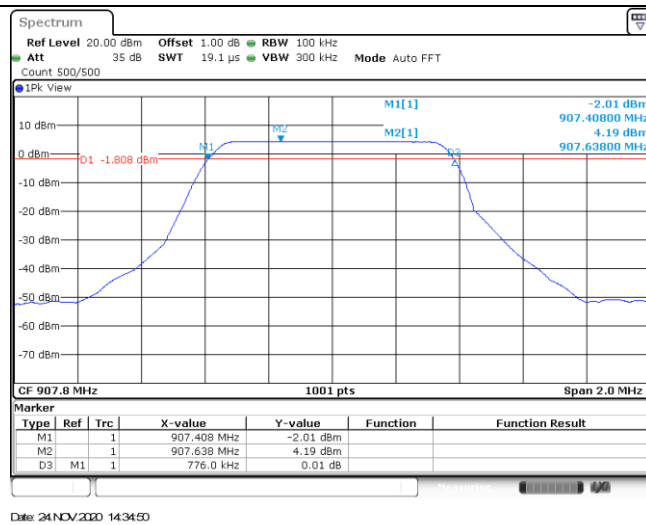
Appendix C: 6dB bandwidth

Type	Channel	6dB Bandwidth(kHz)	Limit (kHz)	Result
LORA	CH-L	782.00	≥500	Pass
	CH-M	776.00		
	CH-H	778.00		

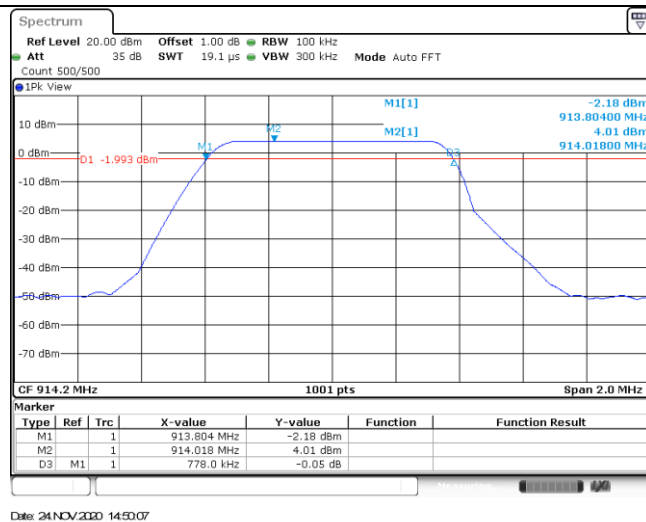
CH-L



CH-M

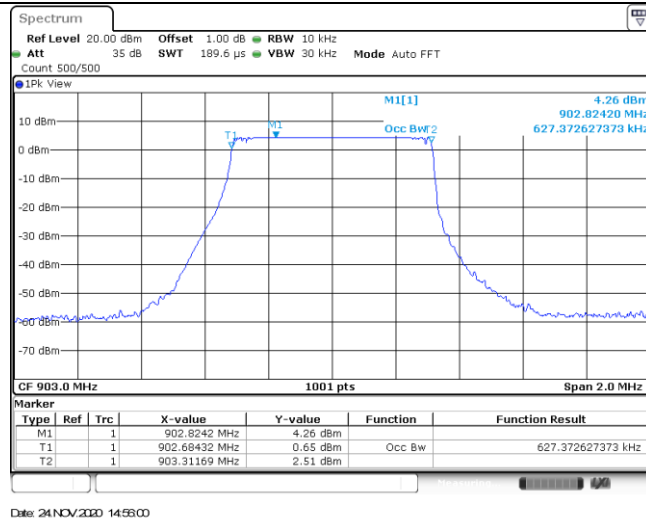
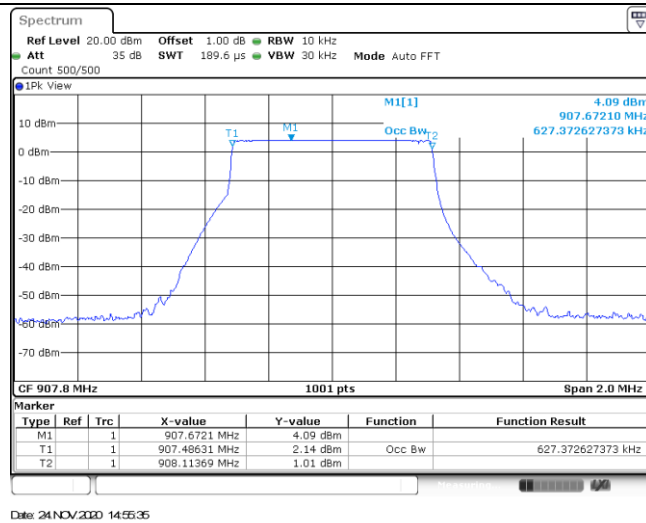
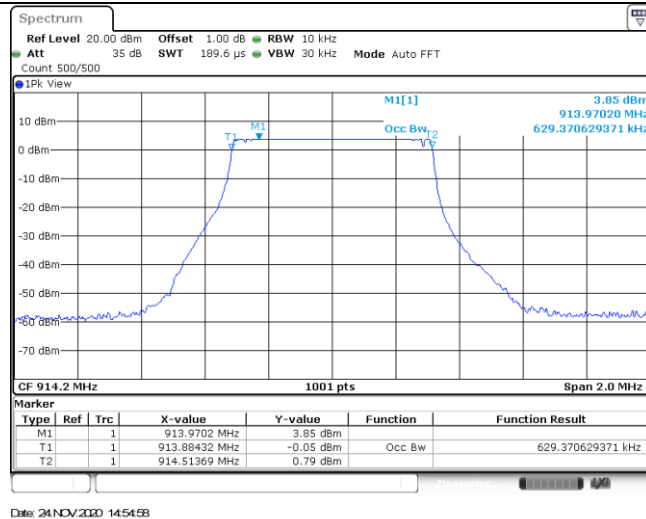


CH-H



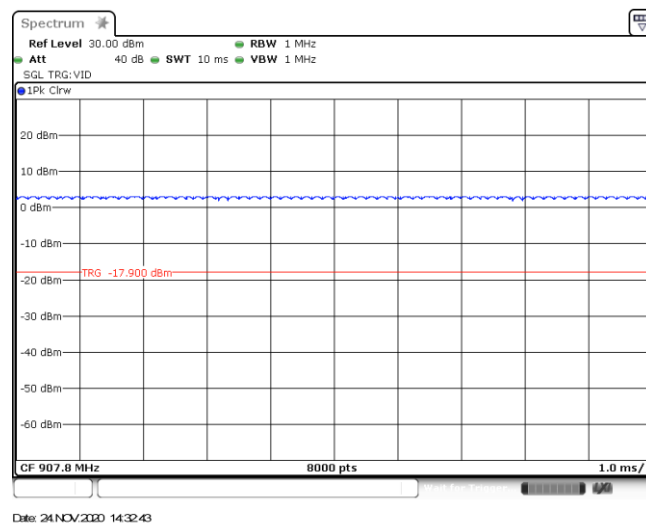
Appendix D: 99% Occupied Bandwidth

Type	Channel	99% Occupied Bandwidth(MHz)	Limit (kHz)	Result
LORA	CH-L	0.63	-	Pass
	CH-M	0.63		
	CH-H	0.63		

CH_LCH_MCH_H

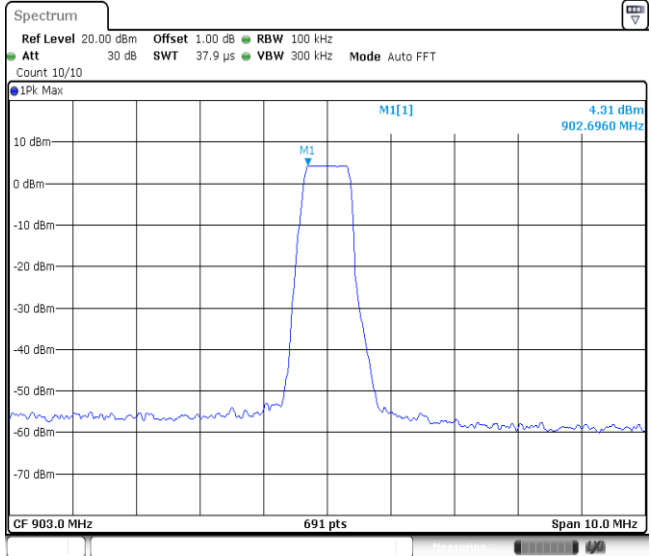
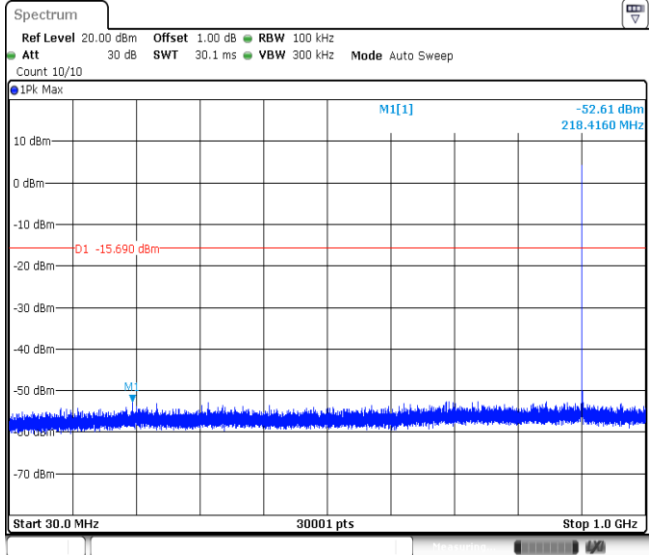
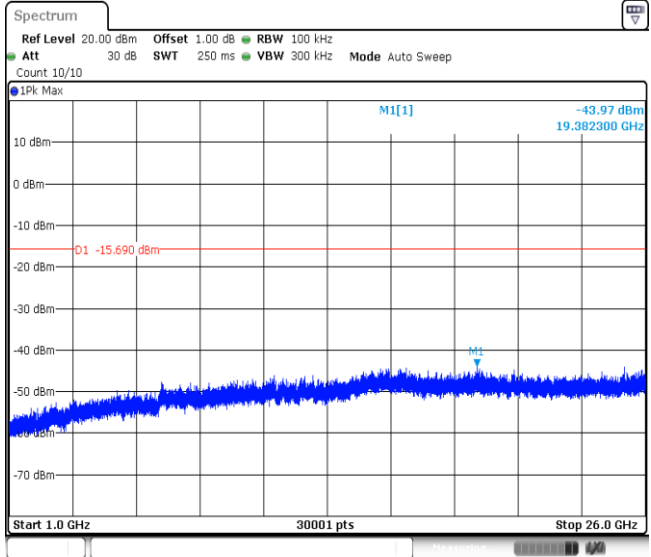
Appendix E: Duty cycle

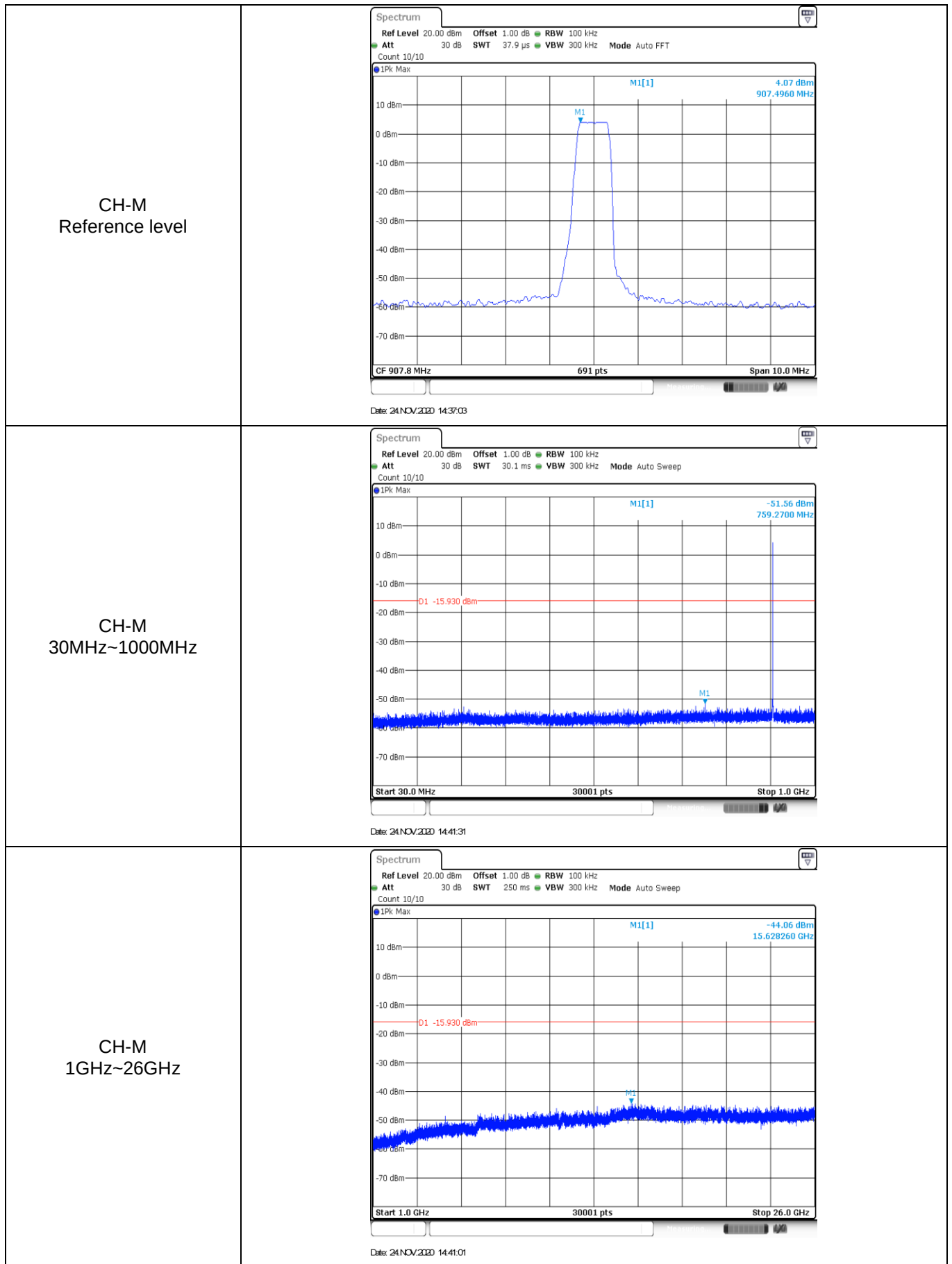
Test Frequency (MHz)	T _{on} time for single burst (ms)	T _{period} (ms)	Duty cycle	1/T _{on} time (kHz)
907.8	1.00	1.00	100%	1.0

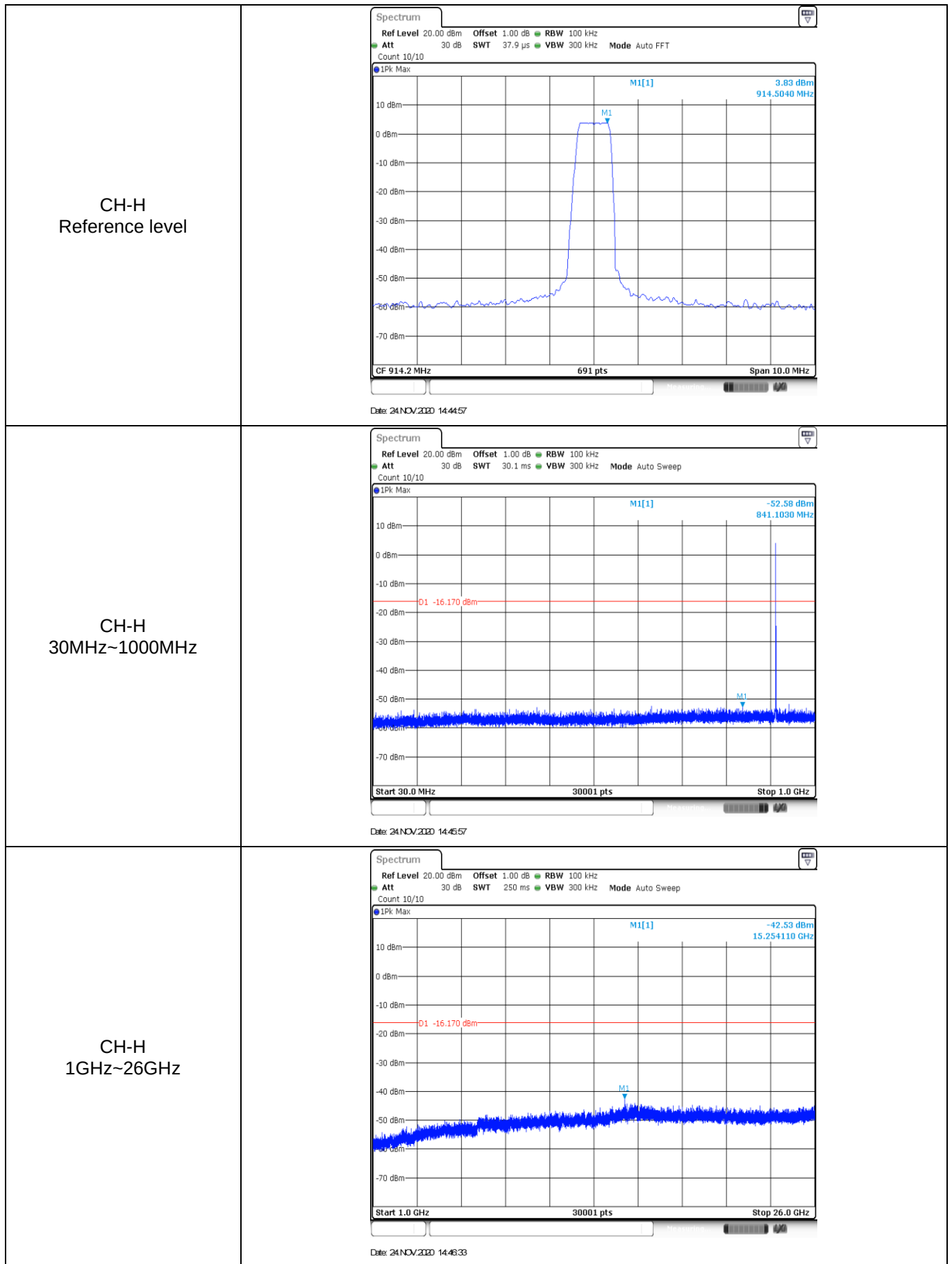


Appendix F: Band edge and Spurious Emissions (conducted)

Test Item:	Band edge																					
CH-L	Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 35 dB SWT 19 μs VBW 300 kHz Mode Auto FFT Count 300/300 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] M2[1] D1 -15.690 dBm M2 4.31 dBm -51.63 dBm 902.85090 MHz 902.00000 MHz CF 902.0 MHz 691 pts Span 6.0 MHz Marker <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>902.8509 MHz</td><td>4.31 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>902.0 MHz</td><td>-51.63 dBm</td><td></td><td></td></tr></table> Date: 24 NOV 2020 14:23:13	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		902.8509 MHz	4.31 dBm			M2	1		902.0 MHz	-51.63 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																
M1	1		902.8509 MHz	4.31 dBm																		
M2	1		902.0 MHz	-51.63 dBm																		
CH-H	Spectrum Ref Level 20.00 dBm Offset 1.00 dB RBW 100 kHz Att 30 dB SWT 75.9 μs VBW 300 kHz Mode Auto FFT Count 10/10 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm M1[1] M2[1] D1 -16.150 dBm M2 3.85 dBm -61.15 dBm 914.1510 MHz 928.00000 MHz CF 928.0 MHz 691 pts Span 30.0 MHz Marker <table><tr><th>Type</th><th>Ref</th><th>Trc</th><th>X-value</th><th>Y-value</th><th>Function</th><th>Function Result</th></tr><tr><td>M1</td><td>1</td><td></td><td>914.151 MHz</td><td>3.85 dBm</td><td></td><td></td></tr><tr><td>M2</td><td>1</td><td></td><td>928.0 MHz</td><td>-61.15 dBm</td><td></td><td></td></tr></table> Date: 24 NOV 2020 14:48:51	Type	Ref	Trc	X-value	Y-value	Function	Function Result	M1	1		914.151 MHz	3.85 dBm			M2	1		928.0 MHz	-61.15 dBm		
Type	Ref	Trc	X-value	Y-value	Function	Function Result																
M1	1		914.151 MHz	3.85 dBm																		
M2	1		928.0 MHz	-61.15 dBm																		

Test Item:	SE
CH-L Reference level	 CF 903.0 MHz 691 pts Span 10.0 MHz Date: 24 NOV 2020 14:42:39
CH-L 30MHz~1000MHz	 Start 30.0 MHz 30001 pts Stop 1.0 GHz Date: 24 NOV 2020 14:43:25
CH-L 1GHz~26GHz	 Start 1.0 GHz 30001 pts Stop 26.0 GHz Date: 24 NOV 2020 14:44:08





-----End of Report-----